

Figure 1 Network concept

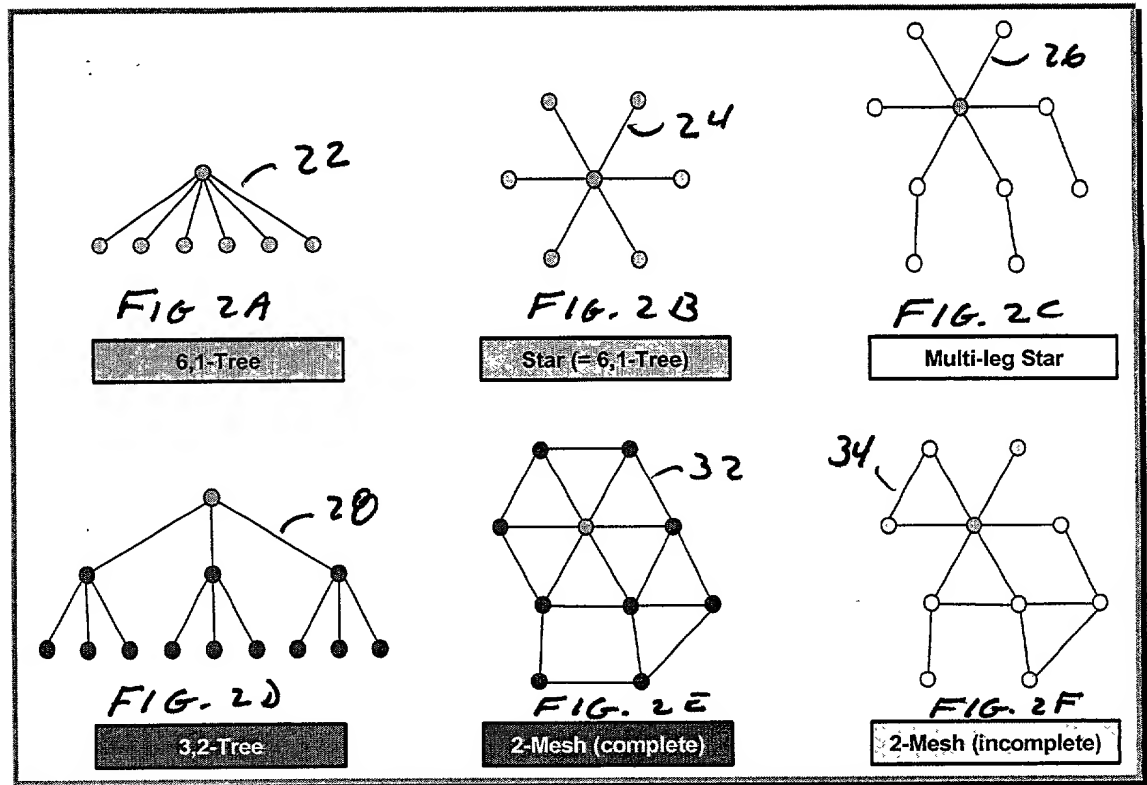
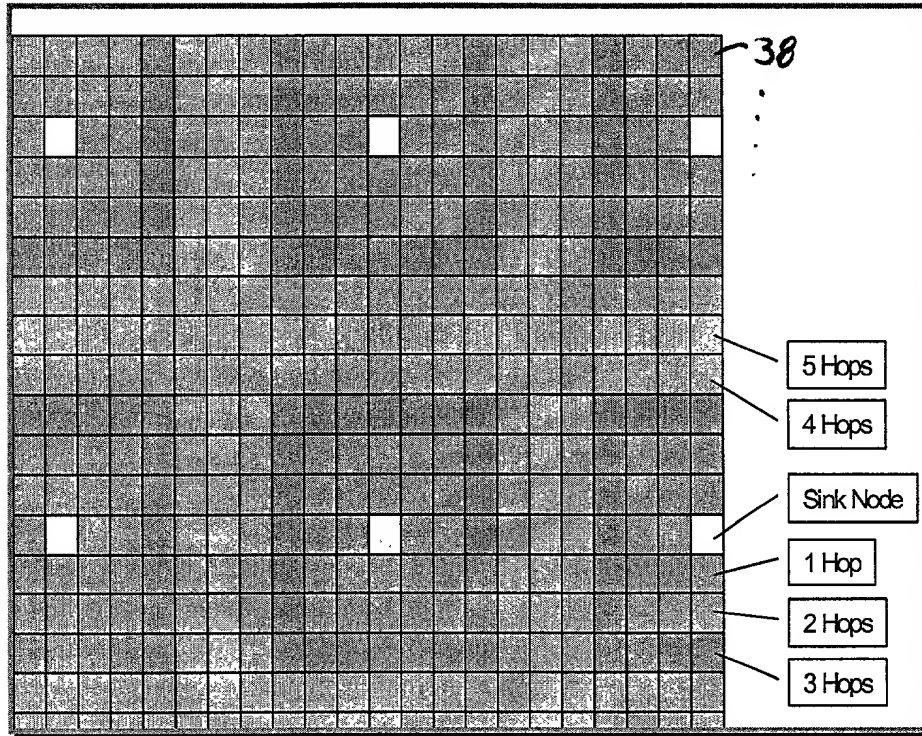


Figure 2 Mesh and mesh derived network topology examples



**Figure 3 Square Grid**

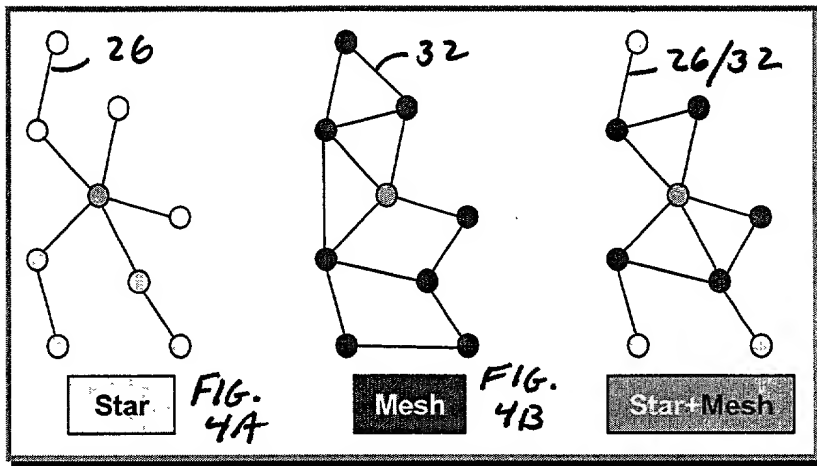
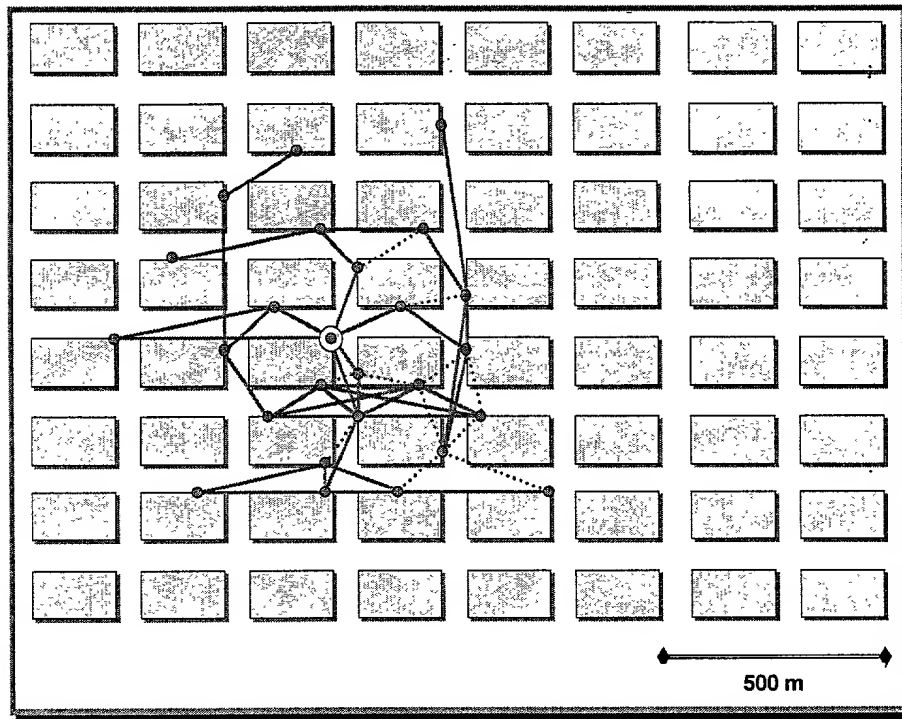


FIG. 4C

Figure 4 Network topologies in the rural case



**Figure 5 Ad-hoc Mesh network with 25 customers (all within 5 hops)**

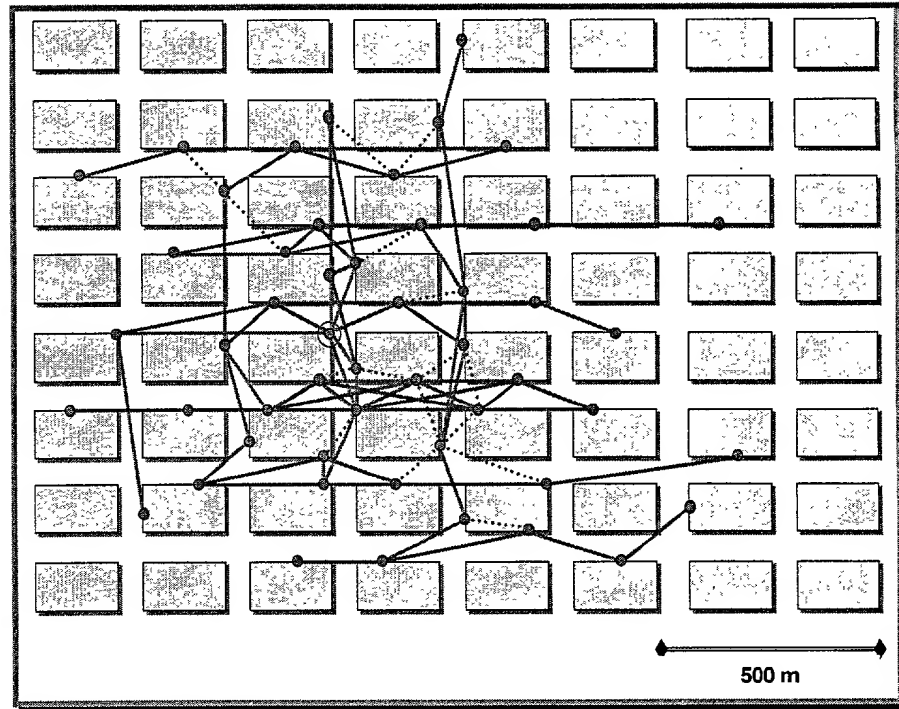
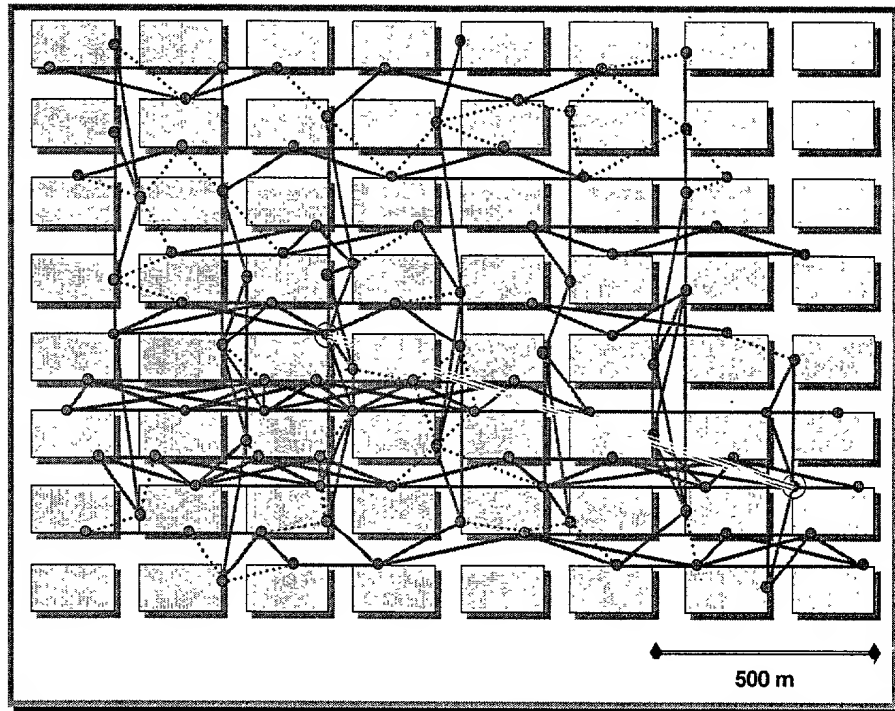
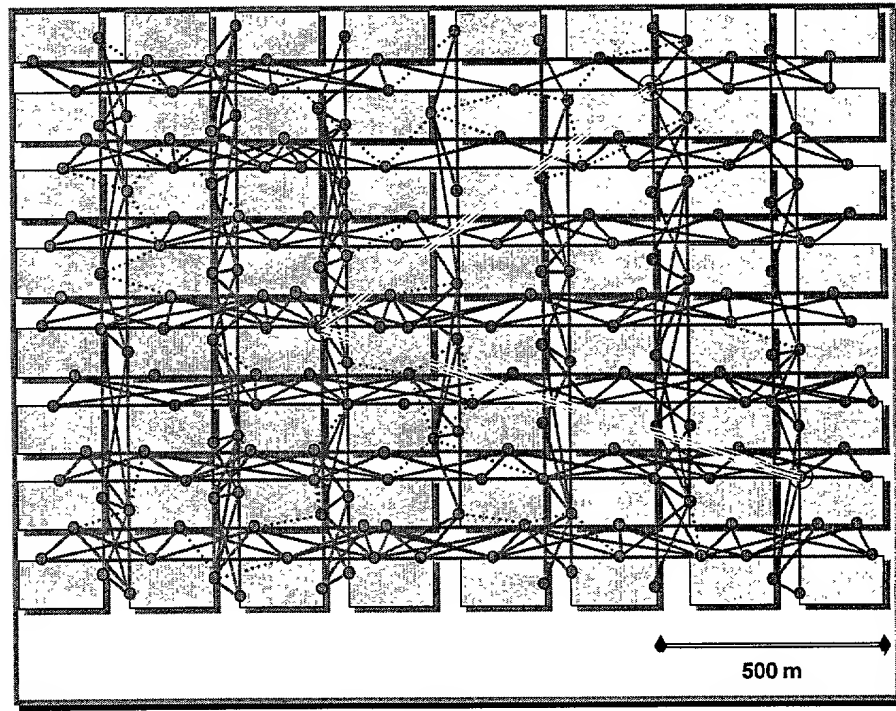


Figure 6 Ad-hoc Mesh network with 50 customers (all within 7 hops)

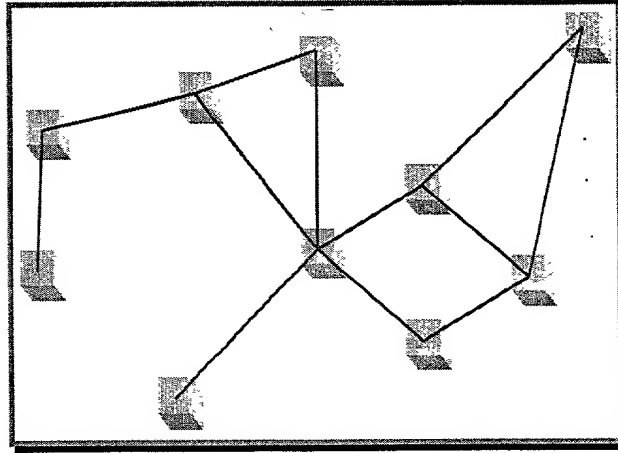


**Figure 7** Ad-hoc Mesh network with 100 customers (all within 5 hops)



**Figure 8 Mesh network with 200 customers (all within 5 hops)**





**Figure 9 Mesh network applied in rural case**

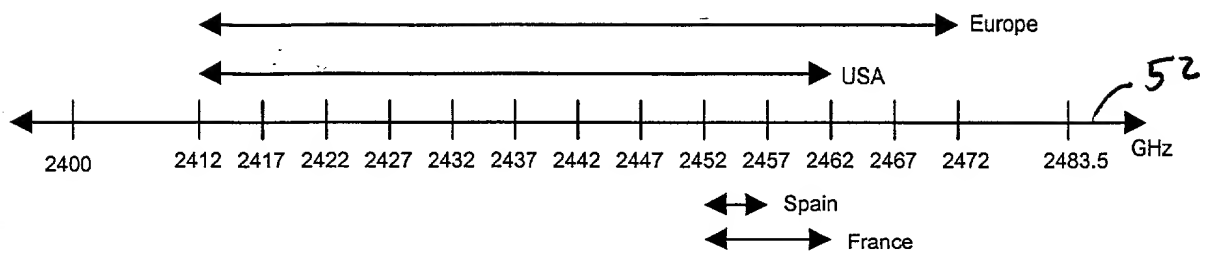


Figure 10 ISM band spectrum allocation

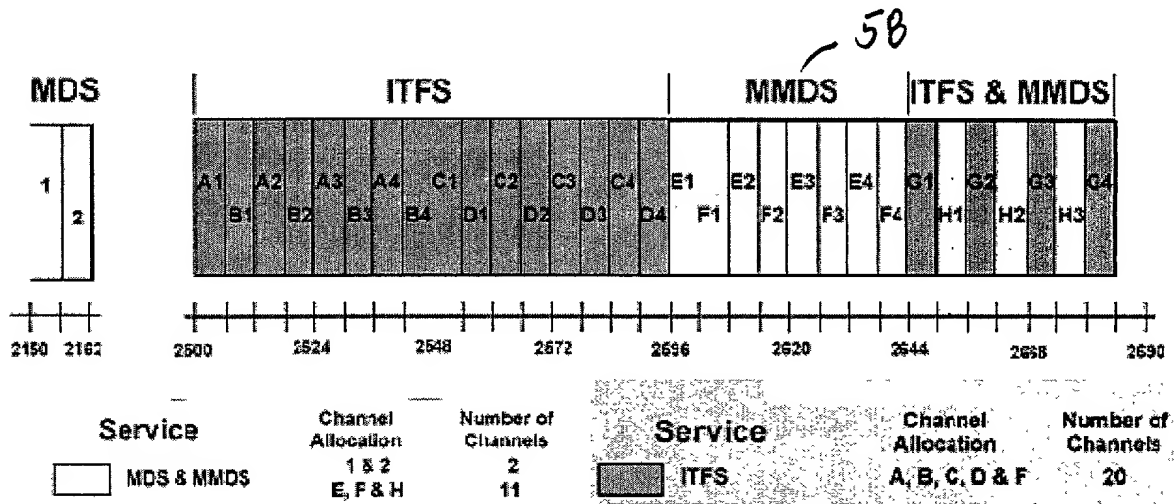


Figure 11 MMDS bandwidth allocation (USA example)

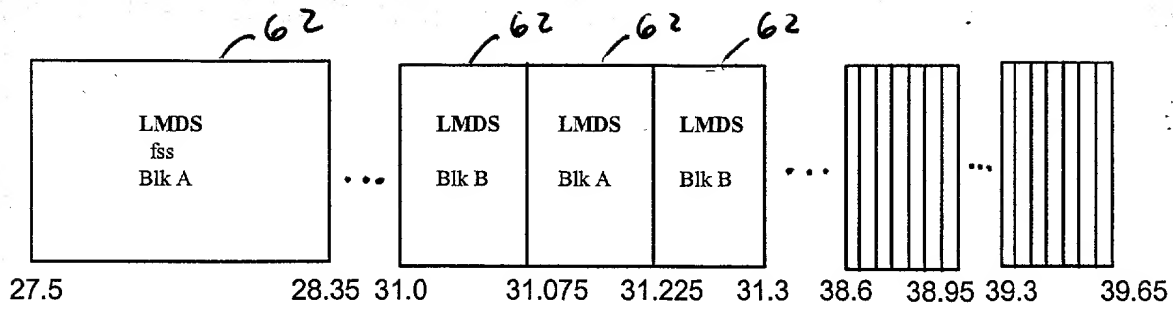


Figure 12 LMDS bandwidth allocation (USA example)

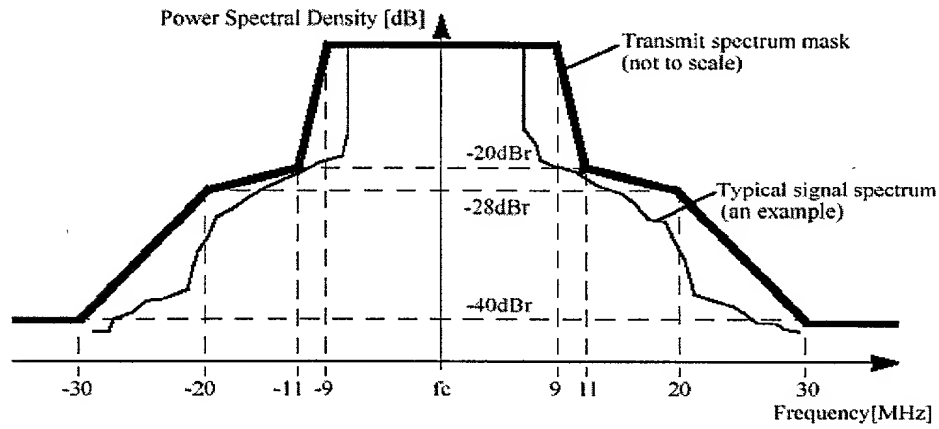


FIG. 13A

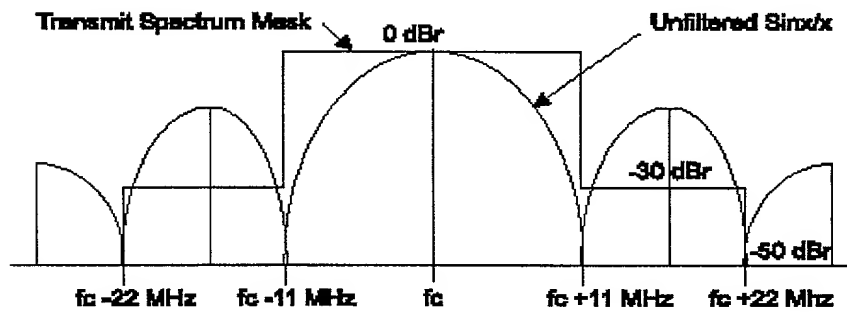
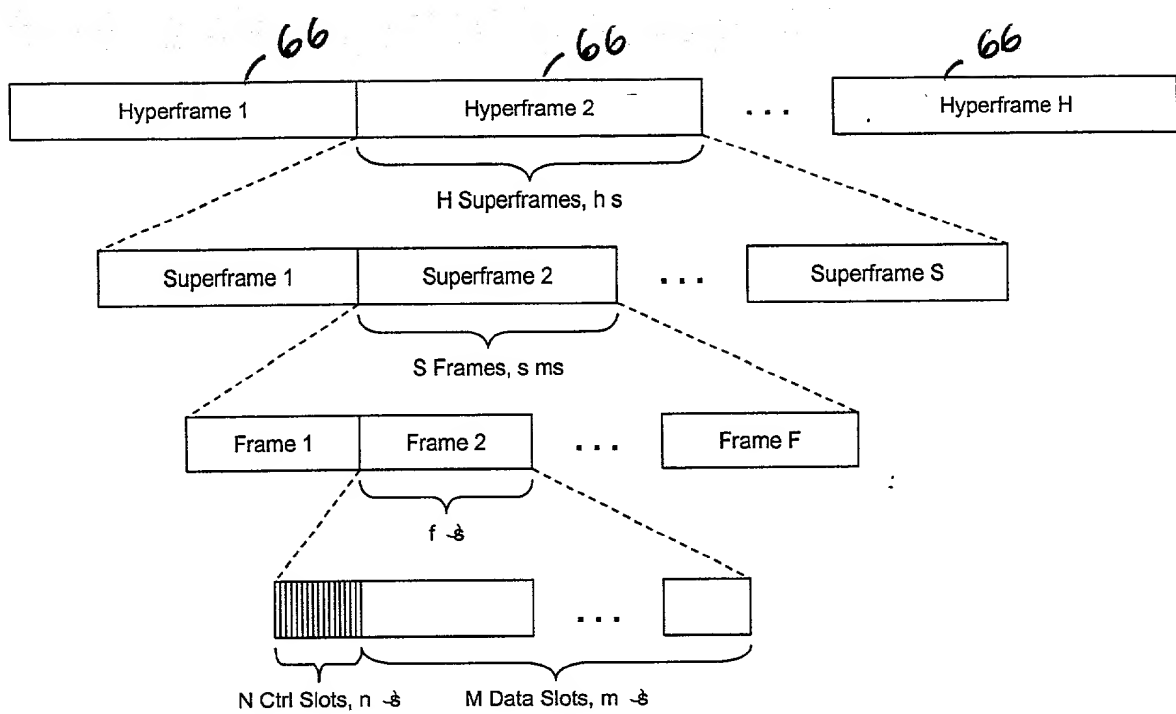
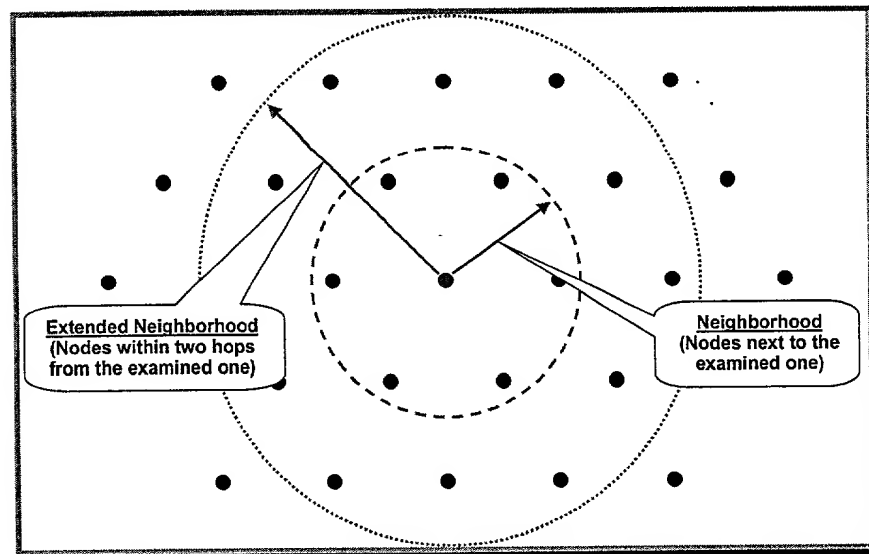


FIG. 13B

Figure 13 IEEE 802.11 Spectral masks: OFDM (11a) and DSSS (11 and 11b)



**Figure 14 Hyper-, Super- and Frame structure**



**Figure 15 Neighborhood definitions**

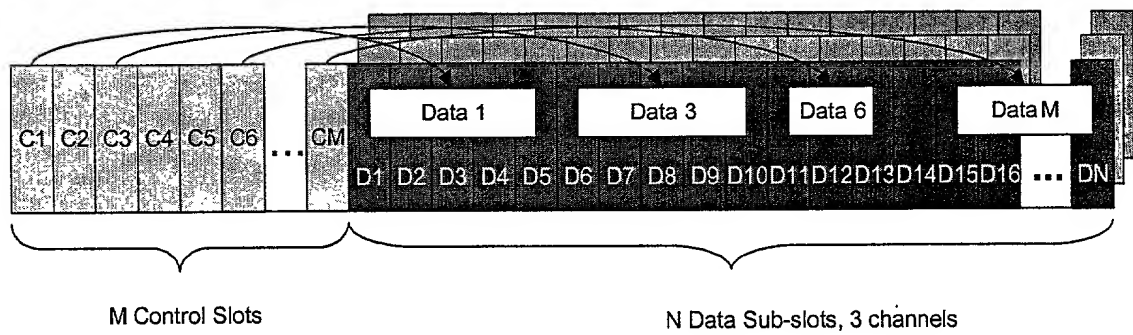


Figure 16 Data slot Reservation example

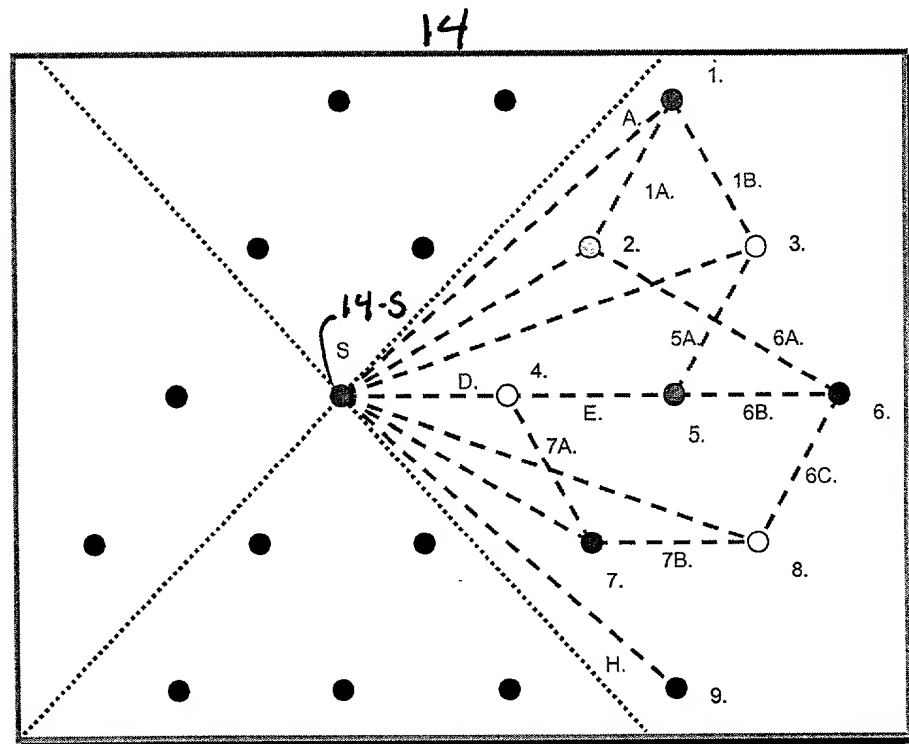


Figure 17 PMT Tier with 90° sectors at the sink (S)

72

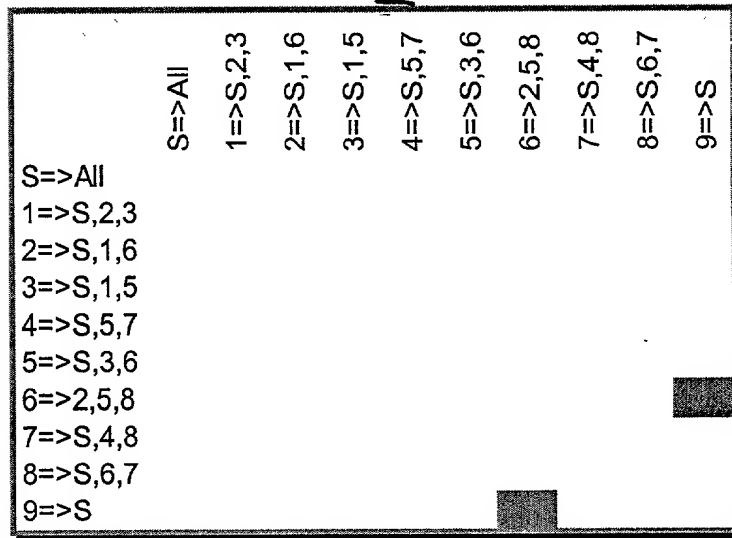


Figure 18 Multi-cast scheduling (gray denotes empty slot)

74

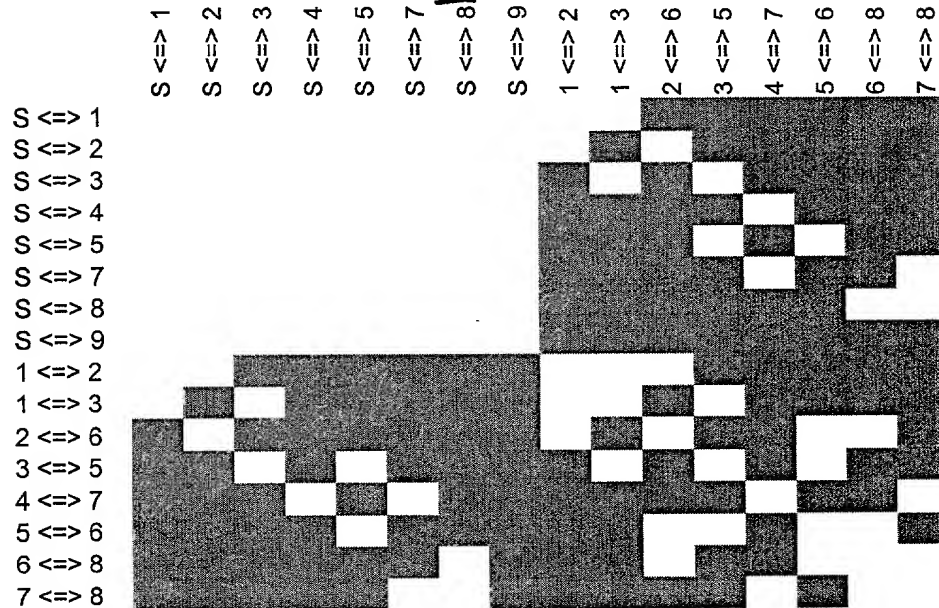


Figure 19 Traffic matrix for network in Figure 17 (gray denotes slot available for simultaneous transmission)

76

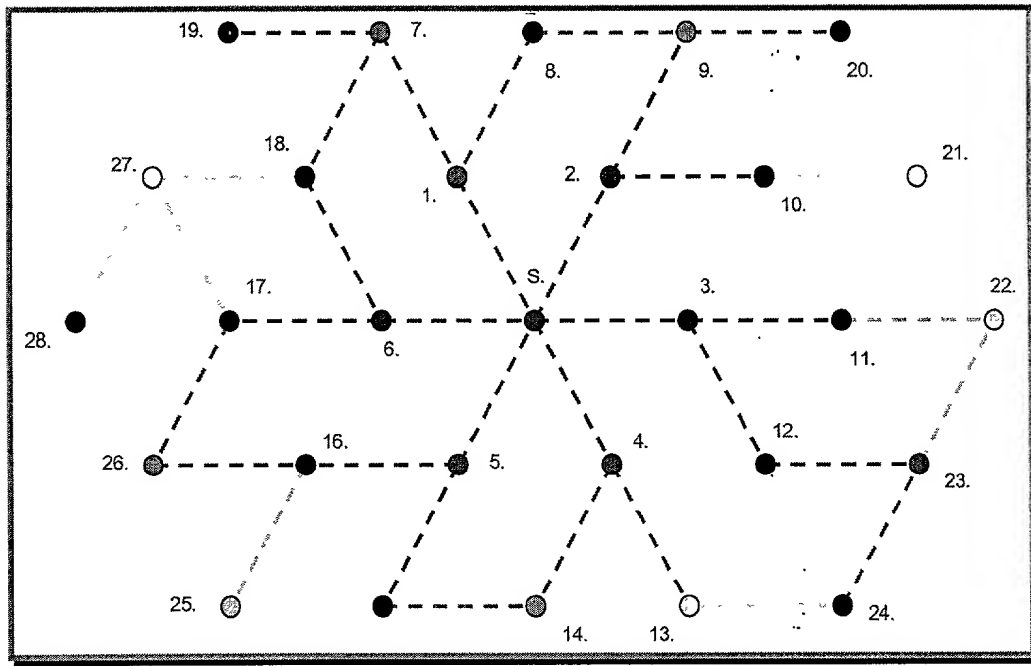


Figure 20 Mesh network based on PTP connections

78

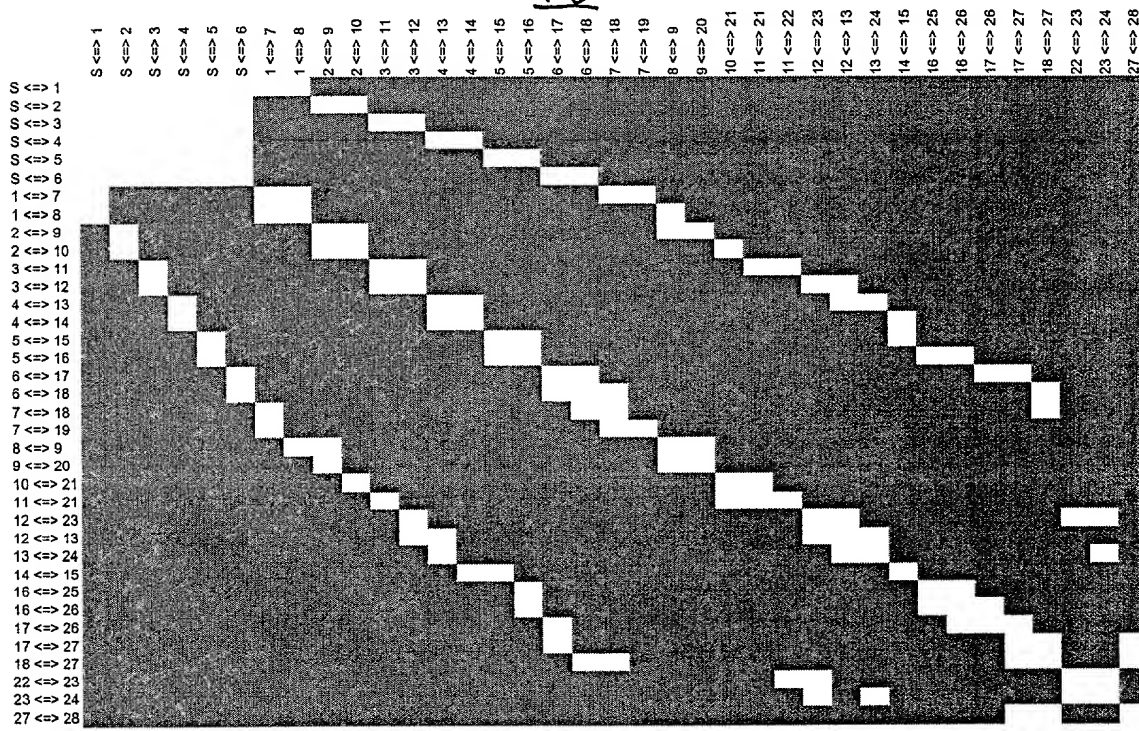


Figure 21 Traffic matrix for network in Figure 20 (gray denotes slot available for simultaneous transmission))

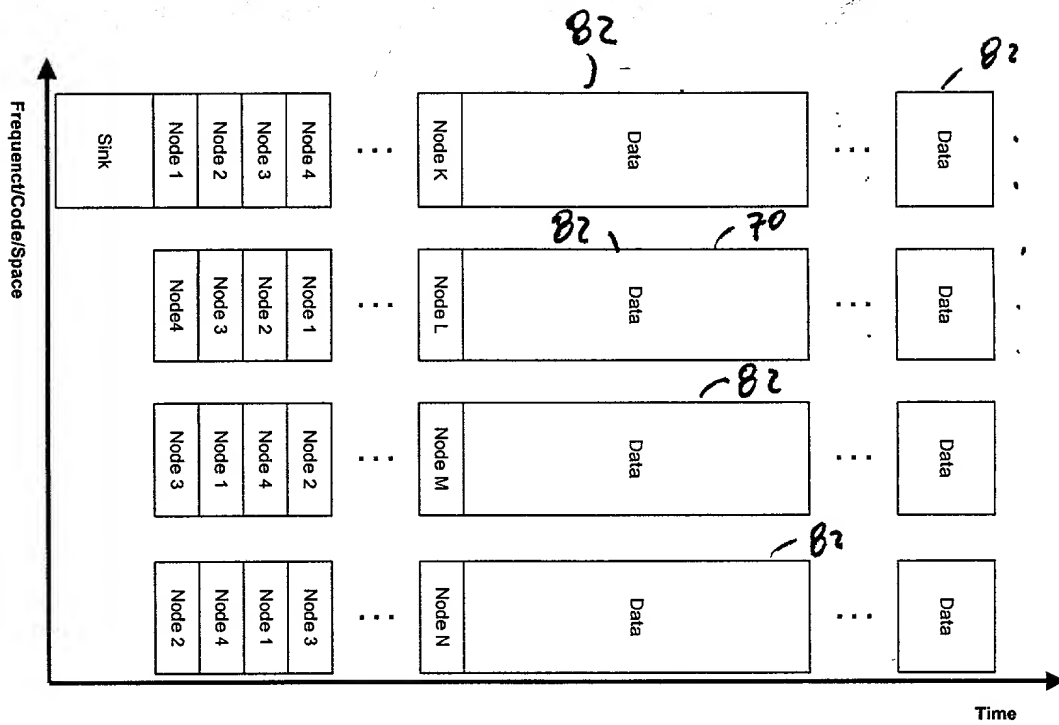


Figure 22 PMT frame structure

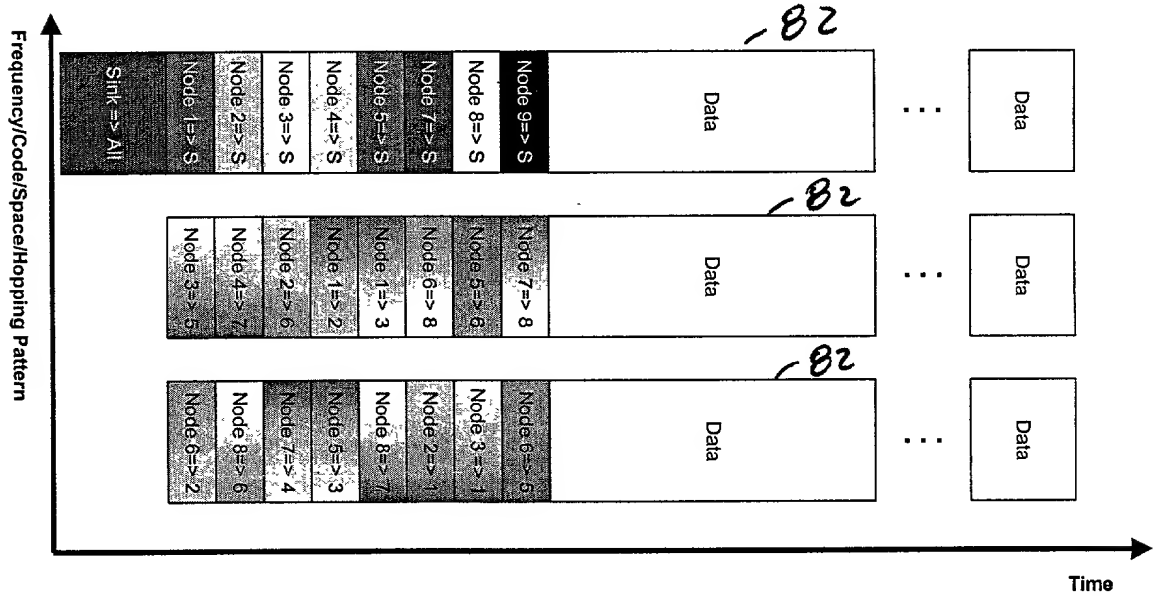


Figure 23 PMT control slot & channel allocation example for network in Figure 17 (assuming narrowbeam antennas at nodes).



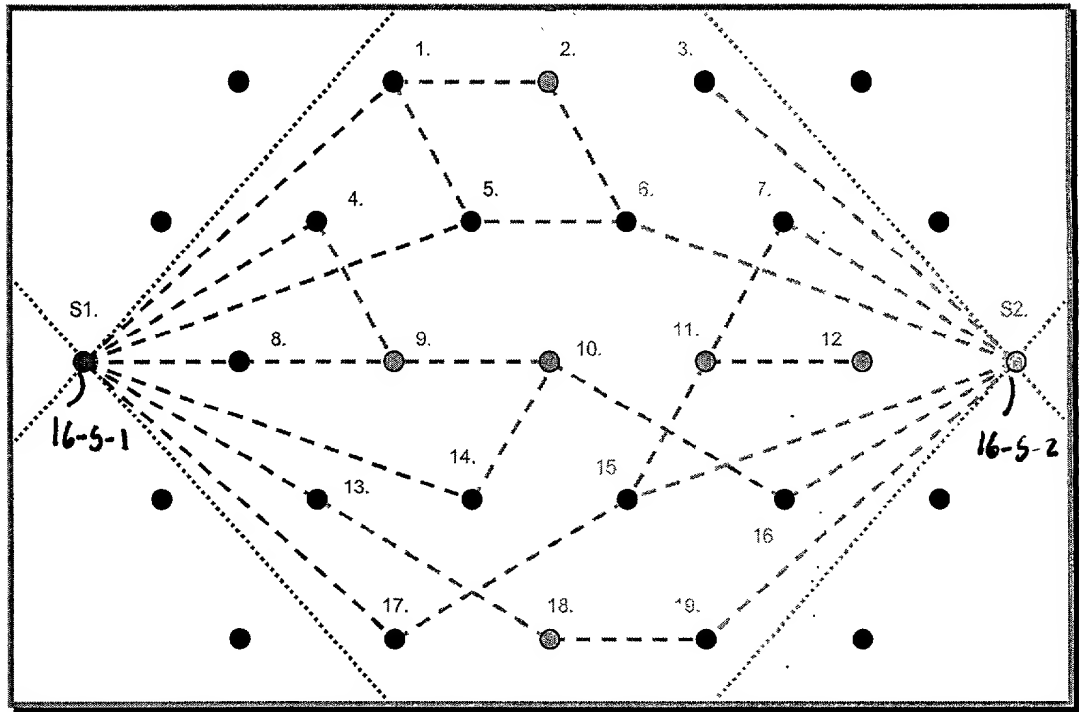


Figure 24 A PMT network with two sinks

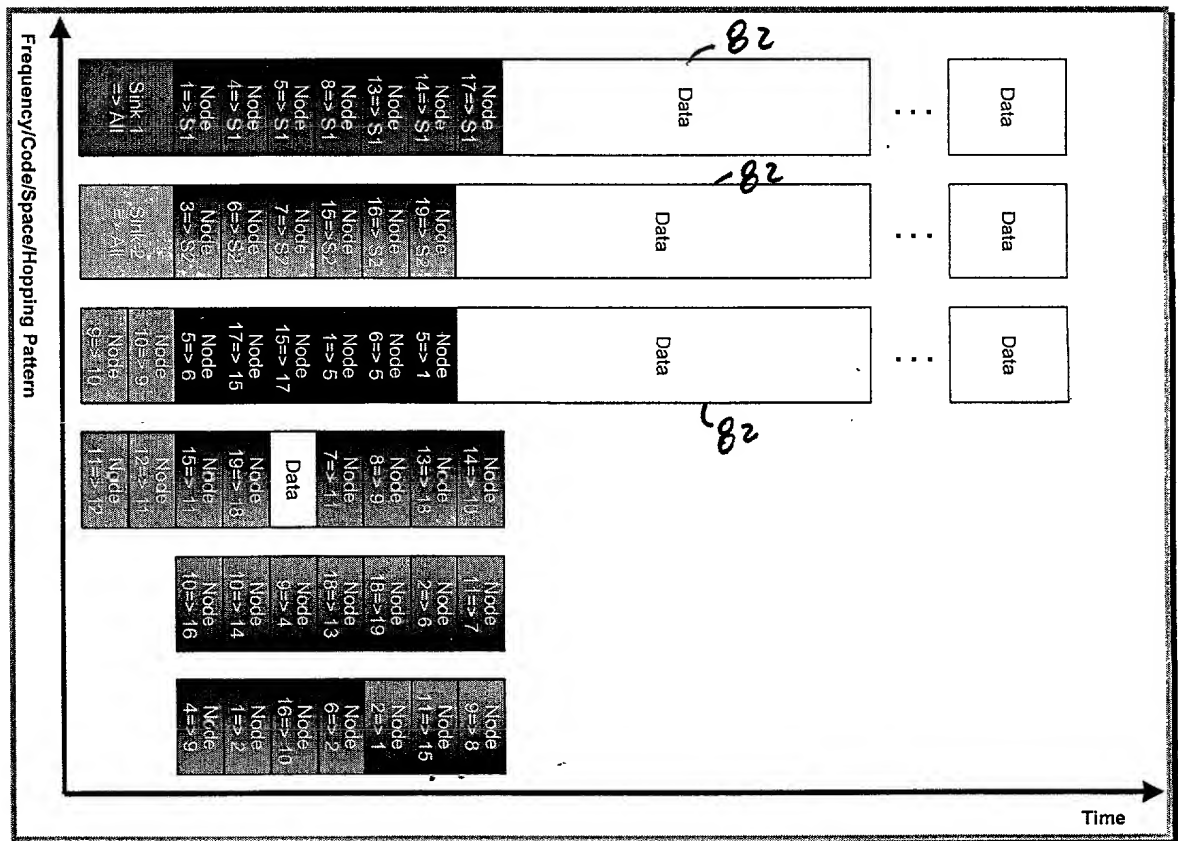


Figure 25 PMT control slot & channel allocation example for network in Error! Reference source not found. (assuming narrowbeam antennas at nodes).